O Processo de comunicação dos astrônomos com o público (o Modelo "linear")

Jorge Meléndez AGA 0421 Temos que ocupar todos os espaços: rua, escolas, centros culturais, espaços virtuais, grande mídia (em particular divulgando a nossa ciência)

Divulgação na Av. Paulista (Via Saber)

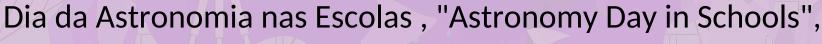


Público pode ficar frente a frente com os cientistas para fazer perguntas (Foto: Reprodução/Via Saber)

https://revistagalileu.globo.com/Ciencia/noticia/ 2019/07/populacao-pode-fazer-perguntas-cientistas-emevento-gratuito.html

Astronomy Day in Schools

10 - 17 November 2019

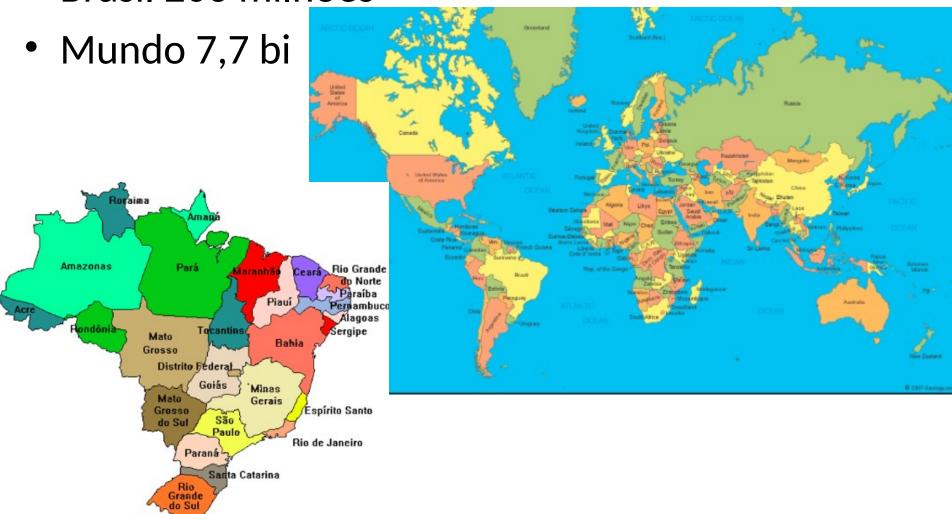


10 - 17 Nov 2019, International Astronomy Union

https://www.iau-100.org/astro-day-schools

Público-alvo

Brasil 206 milhões



Divulgação do Júpiter gêmeo

Jornal Nacional: 67000*3*24 pontos

= 4,8 mi grande São Paulo





Brasileiros descobrem existência de planeta parecido com Júpiter 🖽

COMPARTILHE O QUE VOC E salba o que seus amigo



Divulgação do Júpiter gêmeo

O primeiro exoplaneta brasileiro

POR SALVADOR NOGUEIRA









(I)) OUVIR O TEXTO

O ESO (Observatório Europeu do Sul) escolheu o dia seguinte à passagem da primeira espaçonave enviada da Terra por Plutão para anunciar a descoberta do primeiro exoplaneta brasileiro. Parabéns.



FOLHA DE S.PAULO

Astrônomos brasileiros descobrem gêmeo

de Júpiter orbitando gêmeo de Se de Júpiter orbitando gêmea do Sol Busca por um Sistema Solar 2.0 acaba de ganhar um de seus mais promissores candidatos 6/07/2015 - 08H07/ ATUALIZADO 08H0707 / POR ANDRÉ JORGE DE OLIVEIRA buscar

> 'Novo Júpiter' dá pista Ciência para Terra 2.0

Descoberto planeta extrassolar 'gêmeo' de Júpiter

Na busca por uma 'Terra 2', equipe liderada por brasileiro identificou objeto na órbita de estrela parecida com nosso

15/07/2015 11:00 / ATUALIZADO 15/07/2015 13:11

GIOVANA GIRARDI - O ESTADO DE S. PAULO

Gêmeo do gigante do Sistema Solar orbita estrela parecida com o Sol, o que sugere a existência de um planetinha como o nosso 15 Julho 2015 | 12h 36

Divulgação do Júpiter gêmeo



Newly discovered Jupiter twin hints at new solar system similar to Earth's



By Ben Brumfield, CNN

① Updated 1434 GMT (2134 HKT) July 16, 2015







Jupiter's 'Twin' Found: Is This Solar System







by Elizabeth Howell, Space.com Contributor | July 16, 2015 08:35am ET

Encuentran gemelos de Júpiter y del Sol

Las posibilidades de encontrar un sistema planetario como el nuestro parecen cada vez más cercanas.

Scoperto un gemello di Giove che ruota attorno al sosia del sole

16/07/2015 - 15:35 - Un gemello di Giove orbita attorno a una stella simile al nostro sole. A scoprilo è stato un team internazionale di astronomi utilizzando il telescopio da 3,6 metri dell'Eso. L'esopianeta si trova a una distanza dalla sua stella (HIP 11915) simile a ...

Qual a origem das notícias científicas?

Social media (e.g. Instagram, Face, Twitter)

Press releases

Youtube channels Announcements from scientific institutions

Scientists giving public talks

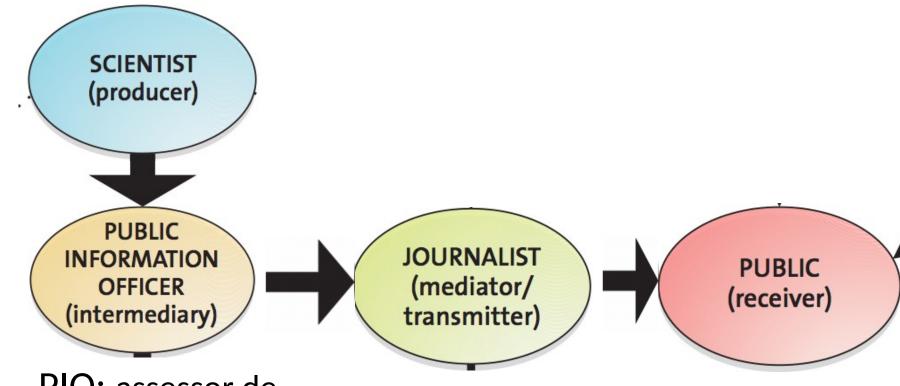
Scientists contacting journalists

Press conferences

Journalist attending scientific meetings

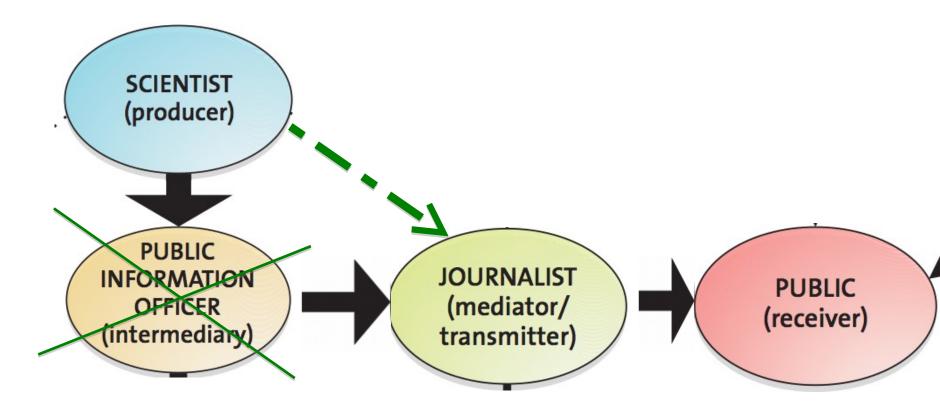
Science journalist reading arXiv Journalists contacting scientists

O Modelo linear (melhor custo/benefício?)

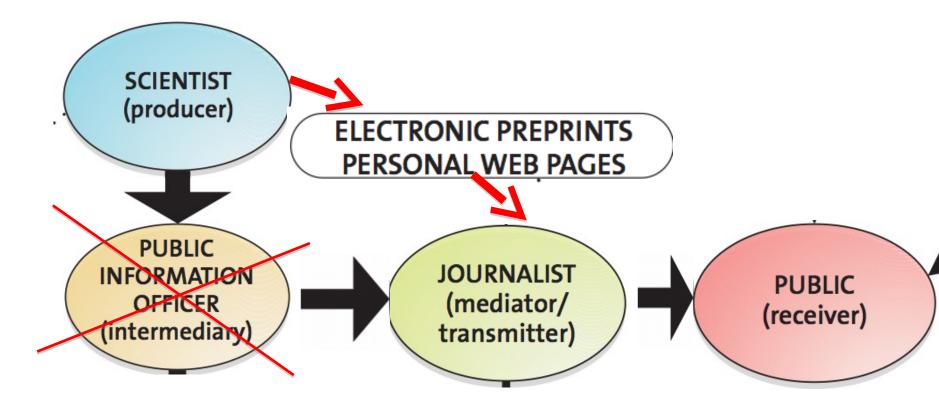


PIO: assessor de imprensa da instituição

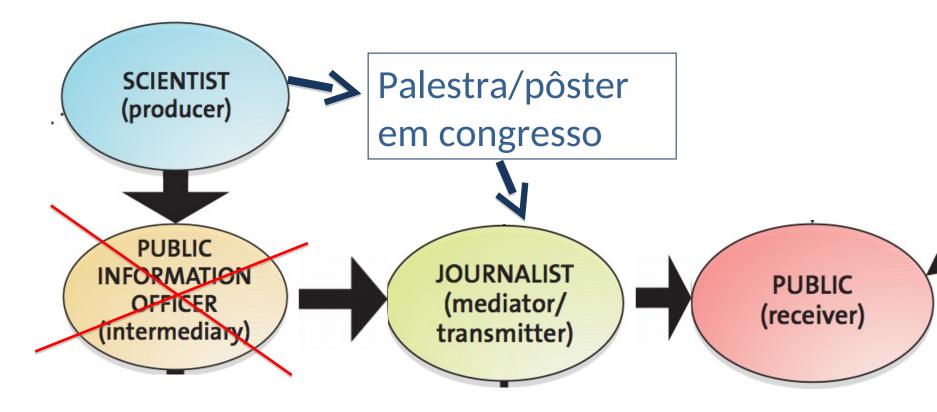
Variações ao modelo linear: astrônomo contata diretamente a jornalista



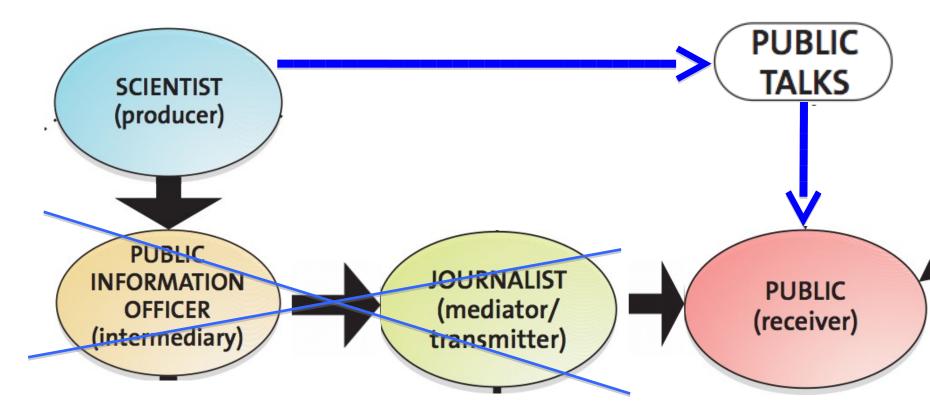
Variações: astrônomo posta artigo no arXiv; jornalista se interessa no artigo



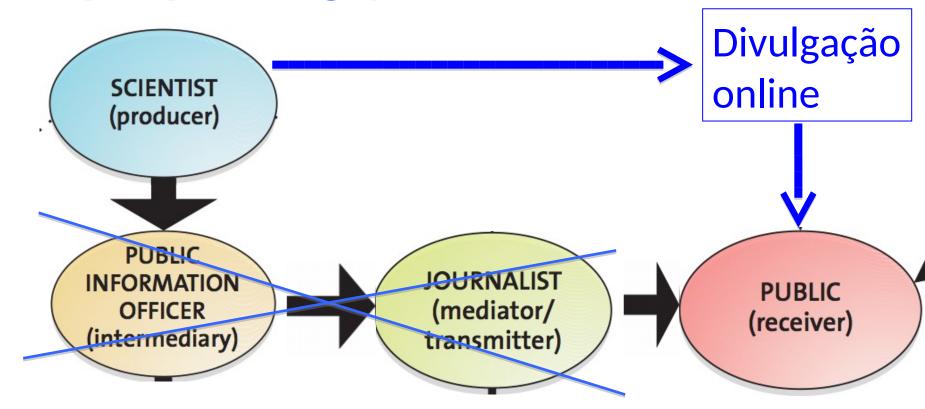
Variações: astrônomo apresenta trabalho em congresso; jornalista se interessa na pesquisa



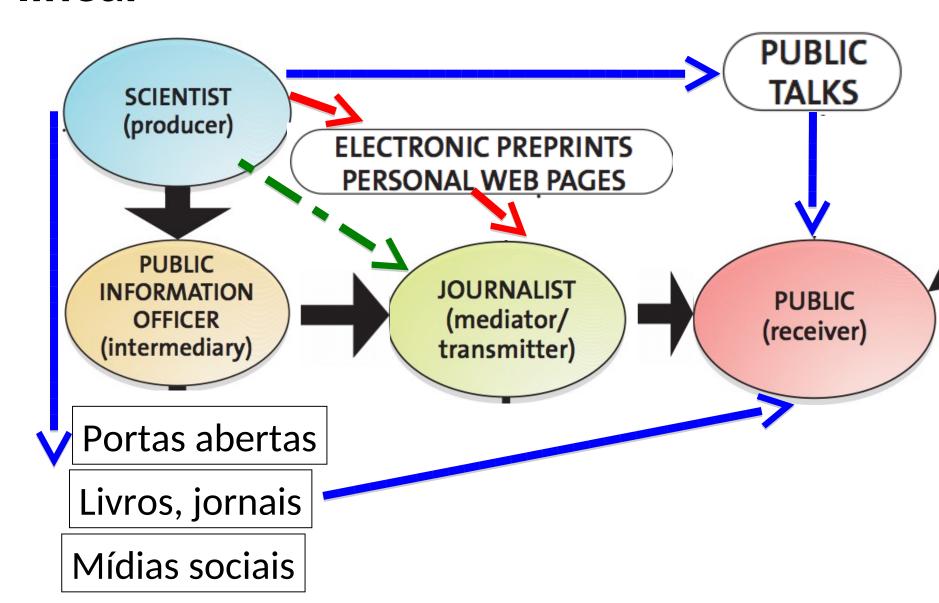
Variações: astrônomo oferece palestra para o público



Variações: astrônomo divulga diretamente a sua pesquisa (e.g. youtube)



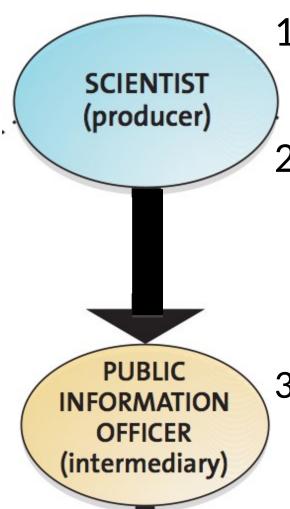
Existem diversas variações ao modelo linear



O Modelo linear (melhor custo/benefício?)



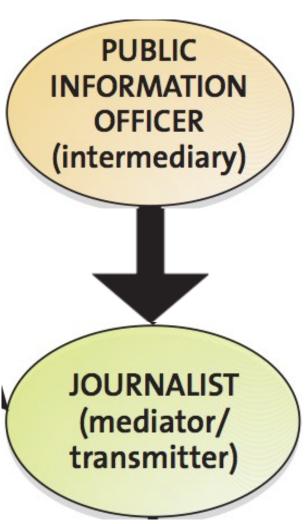
O Modelo linear: do astrônomo ao PIO



- Novos resultados → artigo → revista arbitrada (2 meses 1 ano)
- Astrônomo contata PIO após artigo ser aceito, explicando em termos simples a importância da pesquisa
- 3. PIO: julgar se o resultado é "interessante" (para o público) e se merece press-release

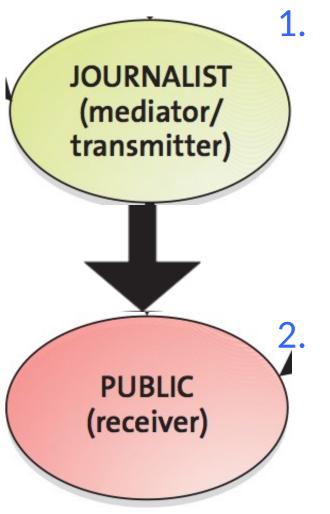
PIO: assessor de imprensa da instituição

O Modelo linear: do PIO ao jornalista



- Rascunho do press-release pelo PIO (em colaboração com cientista)
- 2. Release é aprovada pelo cientista
- 3. Em grandes organizações (p.ex. ESA), comitê revisará a *release* para avaliar conflitos científicos e políticos
- 4. A *press-release* será distribuída a jornalistas

O Modelo linear: do jornalista ao público



1. Jornalistas generalistas (cobrem qq matéria) e científicos (especializados em ciência) podem usar o *release* como base para uma matéria, complementado com pesquisa sobre o assunto e entrevistas a cientistas.

Jornalistas científicos tem contatos bem estabelecidos com cientistas; também, tem menos chances de escreverem coisas erradas.

O Contrato não escrito entre cientistas e o PIO

Cientista fornece ao PIO

- Resultados relevantes
- Material de consulta
- Explicações
- Paciência
- Respostas rápidas
- Imagens e ideias para ilustrações
- ² Revisão do press release
- Disponibilidade para entrevistas na mídia

PIO fornece ao cientista

- Apoio para promover a pesquisa do cientista
- Uma visão "outsider" do mais interessante do trabalho
- Texto do press release
- Ilustrações do release
- Ampla distribuição na mídia (e outros)

s-on Guide for Science Communicators

O Contrato não escrito entre PIO e jornalistas

PIO fornece ao jornalista

- Boas histórias, realmente relevantes
- Resultados mais

importantes
- Ilustrações (arte)
Falta de artistas gráficos na USP

- Contato com cientistas
- Informação adicional (links, artigos, etc)
- Continuo fluxo de boas histórias

Jornalista fornece ao PIO

- Visibilidade da ciência para o público
- Publicidade sobre o projeto e a instituição
- Ampla distribuição dos resultados

O Contrato não escrito entre jornalistas e o público

Jornalista fornece ao público

- Excelentes matérias
- Seleção dos resultados mais importantes
- Bons ou excelentes ilustrações e vídeos Falta de artistas gráficos na USP Bons ou excelentes

Matérias divulgadas rapidamente

Público fornece ao jornalista

- "Pagamento" (e.g. assinatura de jornal, ou ler/assistir/escutar propaganda no jornal, site, tv, rádio)
- Fidelidade

Potenciais conflitos entre cientistas e jornalistas

Journalists and scientists often operate at opposite ends of the communication spectrum. As Treise & Weigold (2002) express it:

"... scientists are frequently disappointed or angry about media coverage of their research, their fields, or science generally. Journalists report frustration with the difficulties of describing and understanding important scientific findings and with the low levels of support provided by their news organisations for reporting on science news".

Devemos compreender que cientistas e jornalistas às vezes valorizam aspectos diferentes

Scientist	PIO Public information officer	Journalist
Values advanced knowledge Porem deveria saber como se insere no contexto geral	Uses the advanced knowledge in a broad context	Values diffuse knowledge
Values technical language	Reshapes technical language into simple language	Values simple language
Values near certain information	Uses facts, but also more speculative indications to give perspective	Values indications
Values quantitative information	Balances facts with emotional and personal accounts	Values qualitative information

The Hands-on Guide for Science Communicators

Devemos compreender que cientistas e jornalistas às vezes valorizam aspectos diferentes

Scientist	PIO	Journalist
Values near complete information	"Cuts through" when the results are trustworthy, but perhaps still not complete	Values incomplete information
Values narrow information	Uses the frontline nar- row science to open doors to the broader context	Values comprehen- sive broad spectrum information
Specialist in his/her area	Specialist in communicating science to the general public	Generalist
Tem uma boa base teórica	Understands theory and applies it in the real world context	Pragmatist

Devemos compreender que cientistas e jornalistas às vezes valorizam aspectos diferentes

Scientist	PIO	Journalist
Values knowledge for knowledge's sake	Focuses on the knowl- edge that is relevant to society	Focuses on what is relevant to society
Is cumulative	Is very picky with which information to accumulate	Is non-cumulative
Is slow	Can develop stories over long time, but always delivers on time	Is fast
Enjoys high professional status	Respects all other actors	Is in the lower ranks of professional status

The Hands-on Guide for Science Communicators

O modelo linear no Brasil

Na pratica, o modelo é difícil de ser aplicado no Brasil devido à falta de PIOs ou de pouco apoio aos PIOs

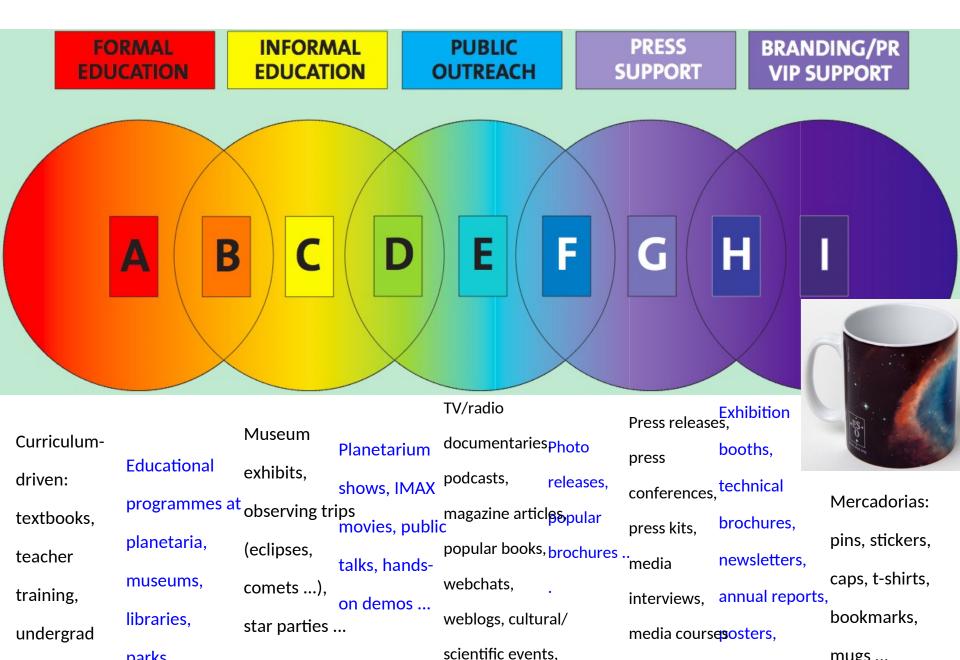
Mesmo contando com o PIO, às vezes o cientista pode ter contato direto com a mídia ou o público

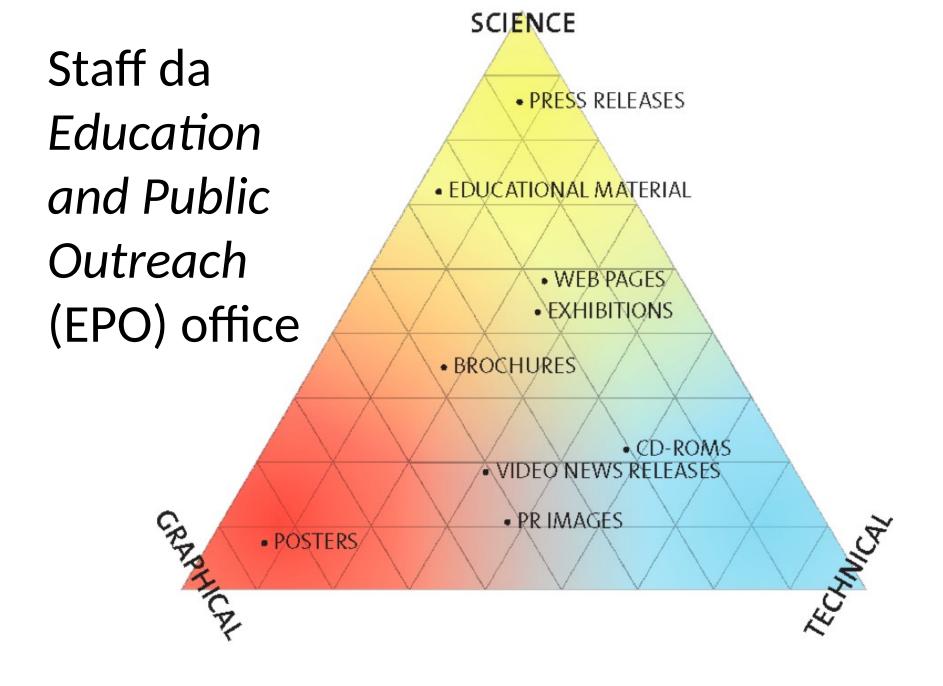


Public Information Officers (PIO) trabalham na Education and Public Outreach (EPO) Office, conhecida no Brasil como Setor (ou assessoria) de Comunicação ou Setor (ou assessoria) de Imprensa

Imprensa. Também pode ser junto ou separado SCIENTIST (producer) com a Extensão Universitária PUBLIC **IOURNALIST** INFORMATION **PUBLIC** (mediator/ OFFICER (receiver) (intermediary) transmitter)

Possíveis atividades da Education & Public Outreach office





Staff, Education and Public Outreach (EPO) office

- Coordinator
- Must: Public information Officer (likely a journalist)
- Graphic designer
- Press officer (web e contato direto com a mídia)
- Educator
- Internal communicator (newsletters, reports, take care of visits)
- Technical communicator (webmaster, etc)
- Editor, proof reader
- Secretary



Após a

mais

NASA, o

importante

centro de

Divulgação

Equipe de divulgação e ensino do ESO

Head of education and Public Outreach

Lars Lindberg Christensen (chefe da equipe)

Head of ePOD

Lars is a science communication specialist heading the ESO-Hubble outreach group in Munich, Germany, where he is responsible for public outreach and education for VLT, La Silla, ALMA, ELT,

and ESA's part of the Hubble Space Telescope.

Email: lars@eso.org Tel: +49 89 3200 6761

Objectives

- 1. Management and coordination of ESO's EPO efforts
- 2. Setting the strategic goals of the EPO work
- 3. Implementation of the EPO Strategy and optimising its retu

Susana Almagro Garcia

Admistrative Assistant







Web & Advanced Projects Coording

Calum Turner

Public Information Officer

Mariya Lyubenova

Astronomer

Raquel Yumi Shida

Web Content Coordinator





Print Coordinator



Print Assistant





European Southern

Susana Almagro Garcia

Admistrative Assistant

Email: salmagro@eso.org

Tel: +49 89 3200 6291

Administrative Assistant

Objectives

- Administrative, Procurement and Budget Support
- Travel Logistics and Internships Support

Events and Project Coordination

ESO-Hubble outreach group in Munich

ESO - Reaching New Heights in Astronomy



2. Setting the strategic goals for the EPO work

3. Implementation of the EPO Strategy and optimising its return-on-investment



Calum Turner

Public Information Officer

Mariya Lyubenova















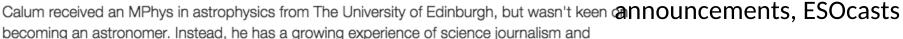




Media Relations, Press Releases

Calum Turner

Public Information Officer



science communication. He has worked with the Royal Observatory Edinburgh Visitor Centre, Edinburgh International Science Festival, and the Astronomy for Remote and Island Schools project, and spent much of his degree bringing astronomy to learners from all over Scotland.

WORK:

coordination/implementati on of outreach projects, writing of press releases, web pages,

Public Outreach

ication specialist heading ESO-Hubble outreach group in Munich, nsible for public outreach and education for VLT, La Silla, ALMA, ELT, and ace Telescope.

Tel: +49 89 3200 6761 Objectives

- 1. Management and coordination of ESO's EPO efforts
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Susana Almagro Garcia

Astronomer

Admistrative Assistant



Mariya Lyubenova



athias Andre Raqu



Raquel Yumi Shida

Web & Advanced Projects Coordinator Web Content Coordinator





Astrônoma Mariya Lyubenova

Astronomer



Objectives

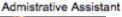
- Science liaison: scientific quality assurance
- Astronomical image production coordination
- ESO Science Outreach Network coordination

Mariya holds a doctorate in astronomy from the Ludwig-Maximilians-Universitaet after pursuing 3 years of research at the Headquarters of ESO in Germany. In her work, she observes and uses the motions and chemical properties of stars in galaxies as fossil records to unravel the build-up and evolution of galaxies.

-Hubble outreach group in Munich

- 2. Setting the strategic goals for the EPO work
- Implementation of the EPO Strategy and optimising its return-on-investment

Susana Almagro Garcia







Calum Turner

Public Information Officer



Mathias Andre Web & Advanced Projects Coordinator



Raquel Yumi Shida







Suporte avançado de informática (inclusive software para imagens)

- 1. Development and implementation of our EPO media archive system
- 2. Development of other technical science communication infrastructure
- 3. Development of outreach image processing tools

Mathias Andre

Web & Advanced Projects Coordinator

Mathias obtained a MSc in Computer Science in England and worked for several years as a Unix system administrator and IT Operations Manager before joining the ESO outreach group to tackle new challenges as Web and Advanced Projects Coordinator.



Calum Turner

Public Information Officer



Objectives









Conteúdo Web

Objectives

- 1. Updating, maintenance, design and development of web sites
- 2. Developing, organizing and publishing web content

Raquel Yumi Shida

Web Content Coordinator

Raquel obtained a professional degree in architecture and urban planning at the University of São Paulo in Brazil, her home country. As an undergraduate student, she also took classes in various fields of science and became an avid amateur astronomer, publishing data and articles on galactic and extragalactic stars. Since then she has worked at the Astronomy Department at the University of São Paulo, at NASA/STScl and at ESA/Hubble, doing both scientific research and astronomy outreach. Today she is responsible for creating visual and textual content and managing several websites for ESO, IAU and ESA/Hubble.



Calum Turner
Public Information Officer





Mathias Andre
Web & Advanced Projects Coordinator

hristensen
communication specialist heading ESO-Hubble outreach group in Munich,
3 is responsible for public outreach and education for VLT, La Silla, ALMA, ELT, and lubble Space Telescope.

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and coordination of ESO's EPO efforts
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on of the EPO Strategy and optimising its return-on-investment







Coordenadora de Publicações impressas

Jutta Boxheimer

Print Coordinator

Email: jboxheim@eso.org

Objectives

- 1. Print Design Coordination, Visual identity oversight
- Layout of print products



Calum Turner Public Information Officer







Raquel Yumi Shida Web Content Coordinator

ion and Public Outreach

e communication specialist heading ESO-Hubble outreach group in Munich, he is responsible for public outreach and education for VLT, La Silla, ALMA, ELT, and

nt and coordination of ESO's EPO efforts strategic goals for the EPO work tion of the EPO Strategy and optimising its return-on-investment







Assistente de publicações impressas

Mafalda Martins

Print Assistant

Objectives

- 1. Print layout assistance
- 2. General graphics: posters, illustrations etc.

Head of education and Public Outreach

Lars Lindberg Christensen

Lars is a science communication specialist heading ESO-Hubble outreach group in Munich, Germany, where he is responsible for public outreach and education for VLT, La Silla, ALMA, ELT, and

Email: lars@eso.org Tel: +49 89 3200 6761

- 1. Management and coordination of ESO's EPO efforts
- 2. Setting the strategic goals for the EPO work
- 3. Implementation of the EPO Strategy and optimising its return-on-investment



Calum Turner Public Information Officer





Web & Advanced Projects Coordinator



Raquel Yumi Shida Web Content Coordinator









Animações / Gráficos

Martin Kornmesser

Animations/Graphics Coordinator

- Objectives
 - Graphical image processing
 - 2D and 3D modelling and animation
 - Misc. motion and still graphics: video editing, encoding, web design



Calum Turner Public Information Officer













- Production of video material for broadcast, online and DVD use
- Maintenance of the online/offline video archive
- Writing of audiovisual scripts



Reaching New Heights in Astronomy



Calum Turner Public Information Officer















Luis Calçada

Assistente de animações e ilustrações Objectives

- 1. Artist's impressions
- 3D modelling and rendering
- General graphics: posters, illustrations etc.

Animations Assistant

He studied Physics/Applied Math (Astronomy) but eventually gave up on the idea of becoming a real scientist. Got his first real job on a science centre in Portugal, where for 6 years he's discovered, developed and matured his skills in visual science comunication. At ESO he's part of the latter steps of the chain, in a group which tries to deliver to the public the extraordinary science there developed in Powork the exciting and inspiring manner it deserves. His tools of choice are Maxon's Cinema 4D, Adobe's Photoshop and After Effects and a Wacom Intuos 3. When he has the time, he also likes to do some photography, a sample of which you can see on his flickr page



Calum Turner
Public Information Officer









Raquel Yumi Shida Web Content Coordinator

alist heading ESO-Hubble outreach group in Munich, plic outreach and education for VLT, La Silla, ALMA, ELT, and

in SO's EPO efforts PO work









ESO Supernova

Coordenadora do ESO Supernova

Tania Johnston

Supernova Coordinator

Tania grew up in the North-East of Scotland, where her love of astronomy started at an early age, thanks to the wonderful dark skies there. Tania obtained a Masters in Chemistry from Southampton, England, before beginning her career in science communication. She has experience creating and delivering hands-on workshops and talks on a variety of scientific topics, to a wide range of audiences. Tania has developed curriculum related educational material and worked closely with the Physics teaching community in Scotland to support the use of astronomy as a context for teaching science at all levels. In 2012, she received a Winston Churchill Travelling Fellowship, which allowed her to travel to Chile to visit some of ESO's large telescopes, to expand her understanding of these facilities and further enhance her abilities communicating astronomy to the public. You can read about her trip in her blog here http://bigtelescopes.blogspot.de/



Calum Turner

Public Information Officer





Web & Advanced Projects Coordinator







ESO - Reaching New Heights in Astronomy

(a) (a) (b)



Bringing ESO's telescopes from Chile to you

Free admission

OPENING HOURS Mon Closed

Tue Closed Wed 09:00 - 17:00

Thu 09:00 - 17:00 Fri 09:00 - 17:00

Fri 09:00 - 17:00 Sat 12:00 - 17:00

Sun 12:00 - 17:00

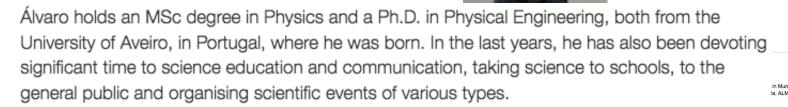




Interns

Álvaro Caseiro de Almeida

Outreach Trainee



In 2013 and 2015 respectively, he participated in the foundation of the first Student Chapter of The Optical Society and in the foundation of the first Young Minds Section of the European Physical Society, both in Portugal.

He is also an amateur journalist. Astronomy and science management and communication are his current main interests.



Calum Turner
Public Information Officer















Ivana Kurečić

Estagiária de PIO

Intern Science Communication

Ivana is a quantum physicist with a nagging interest in finding the amusing parts in stories of scientific research. She joins the ESO ePOD team while on leave from her doctoral studies in quantum information theory at the Max Planck Institute of Quantum Optics (which is right across the street from her current office).

During her studies, Ivana took up many projects aimed to communicate science and lessen the gap between researchers and the general public, but she also worked with professional organizations such as the International Association of Physics Students — as the editor-in-chief of the students' journal and the main organizer of the International Conference of Physics Students in Zagreb. She holds an MSc in Physics from the University of Zagreb, a high school degree in music theory, and an urge to tell you about science you'll love.

You can find Ivana's personal website at happyturtlethings.net and her Twitter account @Turtle_Things.



Calum Turner Public Information Officer





Web Content Coordinator Web & Advanced Projects Coordinator



Raquel Yumi Shida

ESO-Hubble outreach group in Munich,





ESO - Reaching New Heights in Astronomy (a) (a) (b)

Sara Rigby

Intern Science Communication



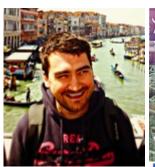
Estagiária de PIO

Sara has always been fascinated with science, and especially physics. She decided years before starting her degree that she would get a PhD, and then go on to a career in research. Whilst studying for an MPhys in Mathematical Physics at the University of Edinburgh, she realised that she much preferred telling other people about science instead. So, she started to volunteer for the science outreach programme at the University of Edinburgh, known as Sci-Fun Roadshow, and later began to write for the university newspaper, The Student, in the Science and Technology pages. After discovering that she definitely didn't want to go into teaching, Sara got the chance to do work experience at BBC Science Focus Magazine. Since then, she has graduated and become even more set on a career in science communication.



Calum Turner Public Information Officer





Web Content Coordinator Web & Advanced Projects Coordinator









ePOD no Chile, tradução de press releases, contatos com a imprensa, encarregados de visitas, etc.

ePOD Chile

Francisco Rodriguez

Chile Press Officer

Francisco is the Press Officer of ESO in Chile. A 2006, he worked for six years in print media, fir the newspaper La Tercera, one of the most impured about science, technology, education an various international conferences for science journation where he specialised in issues such as epidemi problems.

Laura Ventura

Team Leader in Chile

A graduate in Astronomy, Laura has worked in Outreach and Education at world-class astronomical observatories since 2001. She joined ESO in 2006. Since then, she has attended more than 150 visits to Paranal, ALMA and La Silla observatories, developing an extensive experience in supporting media and VIPs at the sites. Laura was recently appointed as Interim Team Leader of ESO education and Public Outreach Department in Chile. Before ESO, she worked for almost four years on the development of educational and outreach contents at the "Director's Cabinet" of the Astrophysics Institute of Canary Islands (IAC), Spain. She studied at the Faculties of Physics of the University of Padua (Italy) and the University of La Laguna (Tenerife, Spain), from 1994 to 1999. She did a post-graduate research work on stellar populations in dwarf galaxies of the Local Group at the Astrophysics Institute of Canary Islands (IAC), her alma mater.



Chile Outreach Officer



ESO Science Outreach Network

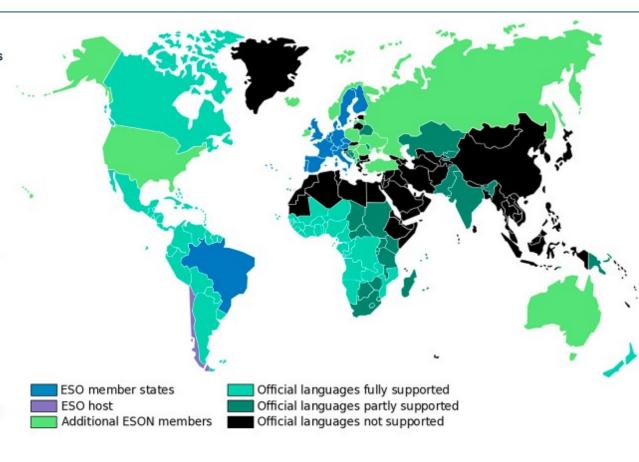


ESO Science Outreach Network

The ESO education and Public Outreach Department has established a network of contacts in the ESO Member states and other countries. The goal of this ESO Science Outreach Network (ESON) is to act locally as ESO's media and outreach representative, in order to promote ESO's mission and achievements, and demonstrate the many inspirational aspects of astronomy. The ESON contacts can also serve as interface between the local scientists and the media. The communication between the member states (at the official and scientific levels) and ESO, takes place through ESO's governing bodies, and not through ESON, which deals only with outreach matters.

The ESON members are science communicators who know the national media and stake-holders, and regularly interact with them. They have a strong interest in promoting ESO, and provide regular inputs and ideas for how to best reach the target groups in their area. The ESON nodes are also in charge of translating the ESO material in their national language.

Below is the list of ESON members. If your country is not represented, and if you or your organization would be interested in acting as ESO's local outreach contact, contact us at information@eso.org.



ESON Countries

























ESO Science Outreach Network: Brasil





Dr Gustavo Rojas

Núcleo de Formação de Professores — Universidade Federal de São Carlos Rod. Washington Luiz km 235 São Carlos - SP

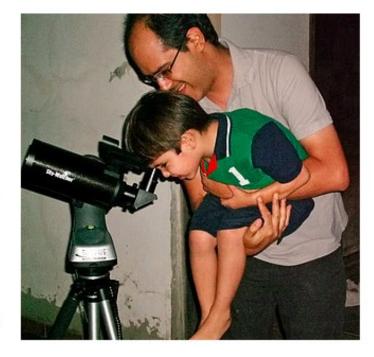
13565-905

Brasil

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Gustavo began his astronomy activities while he was a physics undergraduate at the University of São Paulo (USP). He then undertook postgraduate studies at USP, investigating young, low-mass stars, their chemical abundances and circumstellar environments. Since 2008 he has been a full-time astronomer at the Federal University of São Carlos (UFSCar), located 240 km northwest of São Paulo. He is in charge of a small observatory and works mainly on educational and outreach activities. Among the projects he is currently working on are the videocast, O Céu da Semana (The Weekly Sky) and the radio show Paideia. Both are produced in collaboration with the Open Laboratory for Interactivity (LAbI) at UFSCar. He is also an editor of the Latin American Journal of Astronomy Education (RELEA) and one of the Brazilian



representatives in Galileo Teacher Training Program. His main interests in addition to astronomy are travelling, reading, photography and music. Read Gustavo's blog.

Gustavo on Twitter and YouTube.

Sugestão de Education & Public Outreach (EPO) Office para a USP

- Journalists: OK, existe em boa parte dos institutos
- Já existe boa parte de pessoas trabalhando em eventos, educação e web nos institutos da USP
- Precisamos urgentemente de uma equipe na USP para apoio em:
- animações e ilustrações
- "editor e proof reader": revisa e edita os textos
- "press officer": contatos com a mídia (e apoio para coletivas de imprensa?)